Question 1:

Section 2.3.4 of PEA H6 states, "The imaging capabilities should, among other possible subsidiary objectives, provide information on the geological context for any sources detected. Within this context, desirable attributes of an imager are in order of decreasing priority: high resolution, color differentiation, and stereoscopic capabilities."

Will proposals be evaluated against these priorities, or will they be evaluated according to the evaluation factor stated in Section 6.1 of the PEA: "The extent to which the proposed investigation addresses high priority science objectives, as defined in the JIDT report"? Are there scientific or programmatic reasons for these priorities? If so, what are they? Also, what does "high resolution" mean in this context?

Answer:

The priority order for resolving any discrepancy between documents is:

1. PEA H6 of the Salmon AO
2. Criteria given in the main body of the SALMON AO
3. Any deviations or modifications that might be posted to the FAQ site
4. Other documents in the AO library

The scientific rationale for the priorities for an imaging device was derived from the inputs to and discussions with the JIDT.

The attributes of a proposed imager will be used to judge its capability to deliver scientifically productive data, as determined by the science objectives in the JIDT report, within the spacecraft resources available for the entire payload. With regard to resolution, as stated in the JIDT report, the resolution should be chosen “to improve significantly on the extensive imaging by the Mars Express HRSC and the Mars Reconnaissance Orbiter CTX”.

Question 2:

Under Section 4.2 (Cost and Schedule Constraints), the PEA states: "NASA funds are not restricted to funding NASA-led instruments and could be used to fund a U.S. contribution to an investigation led by an international partner."

While the PEA states that an instrument proposal must be submitted as a single pdf file through NSPIRES by the Instrument P. I. (European in this case), nothing is said about whether a separate proposal to NASA from the U.S. co-Investigator is also required. Please clarify the required mechanism, and also clarify whether a selected NASA

co-Investigator's funding will be provided through NASA Headquarters to his/her Center directly, rather than through JPL (see Section 6.3.2, paragraph 1).

Answer:

1. A separate proposal from a US Co-I is not required and should not be submitted. However, the proposal should indicate clearly the funds that are being requested from NASA. There should be an integrated budget showing the contributions of all partners.
2. Although the management of the US participation will be through the JPL Mars Program office, funds for other NASA centers will come directly from NASA Headquarters. Funds for US non-NASA entities will be through the JPL Mars Program office.

Question 3:

During the TMC review, will you be providing the PIs with the TMC major weaknesses and allowing clarifications to be provided during the course of the review as you did for the New Frontiers proposals?

Answer:

No. This AO does not include such a process, and the evaluation schedule does not permit it.

Question 4:

Can STEP files of the spacecraft and allowable instrument volumes be made available near-term?

Answer:

STEP files of the spacecraft will not be made available for the AO.
The accommodation envelope and field of view descriptions in the E-PIP Appendix A1.2.2 are deemed to be at a sufficient level of detail to prepare instrument proposals.

Question 5:

What are the capabilities of the planned telecommunications system for radio occultation experiments? In particular, what is the Allan Deviation of the onboard oscillator over a 10 second period and what is the High Gain Antenna's transmitted power in carrier-only (no telemetry) mode?

Answer:

The capabilities of the spacecraft known at present are those described in the E-PIP.

Question 6:

Does this AO permit proposals to replace the telecommunications system's planned reference oscillator with an ultrastable oscillator of comparable mass, size and power? Does this AO permit proposals to augment the telecommunications system by adding an ultrastable oscillator inside the body of the spacecraft (i.e. not mounted on the Sun Deck or Nadir Deck)?

Answer:

The AO solicits proposals to address the ExoMars Trace Gas Orbiter science objectives. If a radio science experiment can achieve the objectives then it can be proposed and will be evaluated for scientific merit, for technical, management and cost risk, and for accommodation complexity

Question 7:

Is the "Guidebook for Proposers" referenced in Appendix C of the SALMON AO the guiding document for formatting requirements in the preparation of proposals?

Answer:

As stated in Section 5.1.1 of PEA H6, "Proposal content must conform to the guidelines set forth in Appendix B of this SALMON AO." The Guidebook for Proposers was referenced in PEA H1 and PEA H4 for proposals that were to be submitted through ROSES. It does not apply to PEA H6.

Question 8:

Section A1.1.2 of the E-PIP requires use of SI units. Does this apply only to ICDs or to all internal drawings?

Answer:

Use of SI units is required in ICDs. If other systems are used on internal drawings, inclusion of SI units (dual markings) is strongly encouraged.

Question 9:

Section 6.5.1 of the E-PIP requires EVM reporting, while Section 4.7.6 of the SALMON AO says that EVM reporting is not anticipated. Should EVM reporting be assumed?

Answer

JPL business practices, in accordance with legal and contractual agreements with NASA, require EVM to be used for contracted activities exceeding $25 Million.

Question 10:

The science operations center (SOC) at JPL is not very well defined. Can you provide more details about the roles of the JPL SOC, particularly with respect to downlinked science data? What will the SOC do that the instrument teams don't have to plan to do themselves?

Answer

While details are still being worked out, the Science Operations Center (SOC) at JPL is envisioned to provide the following: 1) an integrated plan for science observations that is communicated to the ESA Mission Operations Center (MOC) for uplink to the spacecraft and 2) distribution of the science instrument data and embedded housekeeping information by staging these data (from the MOC) for the science teams to pull to their designated (home) institution. The science teams are responsible for the production and archival of standard and special data products to the Planetary Data System (PDS). The SOC will archive the raw data stream to PDS.

Question 11:

Are there any clarifications to the pointing for occultation? (currently 0.5 mrad, assuming 3 sigma) or the orbit (400 km, 74degree inclination)?

Answer

There are no changes from E-PIP and hopefully the orbit animation will clarify - it is coming. The animation will illustrate what the spacecraft will do normally and what it does when taking high resolution images of the surface. Please stand by.

Question 12:

Are the page limits in Appendix B still valid or does the 15 Mbyte file size rule?

Answer:

Both limits apply; page limits still hold, and the file size limit also applies so we don't have big pictures and things like that coming in.

Question 13:

Is the ram direction +z or –z?

Answer:

The direction of flight of the spacecraft body is different depending on the mission phase. During science phase it is in the XZ plane, as yaw steering is conducted around the Y-axis. The animation will make it clear. During Aerobraking it is -X direction.

Question14:

Can we protrude into the probe position (EDL Demo position, +X) once it has been separated from the main spacecraft?

Answer:

According to Figure 5.3.3 in E-PIP, the volume indicated in red is the "nominal volume", each proposed instrument should try and stay in there. A yellow volume is indicated as potential extension volume, for which a case-by-case assessment will be carried out. A protrusion into this volume (or any other volume) needs to be justified, such that impact on spacecraft design and risk can be assessed.

Question 15:

Can you provide more details on the instrument control volume near the probe prior to deployment?

Answer:

In case the question is about the volume addressed in Q4, in the drawing on page 105 (and on pages 104 to 110) of the E-PIP all relevant measurements for the instrument volumes are given. If a specific scale label or measurement is missing, please let us know. We do not plan to add more information, or any CAD models.

Question 16:

Do we have to conform to 7120.5?

Answer:

Can you clarify the question. The usual requirements will apply, but if there is something specific, we will entertain it. But in general, yes we will follow 7120.5

Question 17:

Who conducts the Instrument/Spacecraft compatibility review, is it ESA, NASA or a combination of both agencies?

Answer:

It will be a combination of both, primary led by spacecraft people, but certainly NASA too.

Question 18:

Does the $100 Million cost cap include Phase E and reserves?

Answer:

The $100M NASA allocation is for development which typically is through launch + 30 days; i.e., for phases A-D. (Note: ESA has a different Phase E start—before launch).

Question 19:

Can you confirm NOI's deadline is February 19? Several dates appear on the websites.

Answer:

Due date IS 19th of February. There will NOT be a formal acknowledgement of receipt.

Question 20:

The drawings on Pages 105-111 do not have sufficient detailed dimensions provided. Is there any plan to provide more detailed drawings for the proposed effort?

Answer:

All relevant measurements for the instrument volumes are given. We note that if you print it on A4 or letter size paper it might be hard to read, but it does blow up on the PDF and volumes can be reconstructed. If a specific scale label or measurement is missing, please let us know. We do not plan to add more information, or any CAD models.

Question 21:

Is there a Co-PI option for European Co-I's?

Answer:

I don't think there is formally that role. Formally no, but a lead CoI is available. CoIs contributing hardware and funding are expected. We want ONE PERSON responsible for the instrument. NASA does not entertain CoPIs. (BUT see below Q24)

Question 22:

Could you clarify how proposals to NASA with significant ESA contributions will be reviewed: will both NASA and ESA internal review processes apply?

Answer:

YES, and they will be coordinated. That is true in all cases.

Question 23:

How frequent will the science teams be given fresh data and nav information?

Answer:

Mission and observation planning will be conducted in a cyclic process, in which latest orbit determination data and instrument results will be used for the planning of new observation requests and creation of the relevant command files. Processed spacecraft-data will be available about each week. Global planning happens with a cycle-time of about two months (i.e. 1 month prior to a 28 day planning cycle), whereas the final details of instrument operations can be updated with a cycle-time of about two weeks.
1. Instruments do not predict the spacecraft trajectory themself. Instruments get the spacecraft trajectory (OEM file) delivered from MOC (ESOC Flight Dynamics).
2. Definition of pointing (spacecraft attitude) occurs typically 1 month prior to a 4 weeks planning period. The resulting orbit file (OEM) is used for planning the attitude and payload operations.
3. Orbit Determination is performed on a weekly basis and results in an orbit file (in OEM standard) which includes a reconstructed trajectory for the past and predicted trajectory for the future.

Question 24:

Follow up to Q21 The ESA documentation says that proposals MUST designate a Co-principal investigator..

Answer:

The differences between NASA and ESA on this question can very likely be made compatible. A more detailed response will be made available soon and posted to this FAQ list.

Question 25:

If an instrument's operation can be adjusted by a NIPC, how frequently will there be an opportunity to upload a NIPC to adjust the operation in light of on-going mission discoveries?

Answer:

The operational baseline, as outlined in the E-PIP, is described as answer to Question 23.

Question 26:

Will selections in July be for a Phase A (downselect) or Phase B.

Answer:

We have no plan for a downselection process; instrument Phase A development will start following selection, but no downselect. This is a one Step evaluation for selection.

Question 27:

Will NASA be able to provide funds to US instruments as soon as selection is announced to enable them to participate in the payload activity asap?

Answer:

NASA intends to have teams participate in payload activities ASAP – We are not sure how fast we'll be able to pull it off. This is part of the reason we are doing this so quickly. ESA is also committed to starting things ASAP.

Question 28:

Should we plan for FY10 funding?

Answer:

In principal, yes, but it might not be very much. Schedule guidelines in the EPIP should be sufficient to inform you of what activities to include in that.

Question 29:

What frequency will be used for telecom between Earth and orbiter?

Answer:

X band.

Question 30:

Is there also a Ka Band string provided by NASA?

Answer:

We are in discussion about that. The E-PIP describes what we know to date. The spacecraft baseline is a X-band communication subsystem only.

Question 31:

Page B-9 of the SALMON AO there is a list of bullets, section 8, investigation implementation. B-11 section 6, attitude and control requirements. Does that apply to the instrument part of the proposal.

Answer:

SALMON AO is written for a broad range of things. Many things are for a full up spacecraft and instrument. Things that are not relevant should be pretty obvious. The PEA has a list of things that are excluded from the full SALMON AO. Exceptions are listed in Section 4.4.

Question 32:

What are the activities to be supported by the JPL SOC?

Answer:

The SOC will be in charge of instrument observation planning and processing and

dissemination of instrument data products. Further details will be made available during the second half of 2010.

Question 33:

Appendix H-6, 4.4, #5 says that the NOI should include the name of the organizational lead from each organization rather than identifying the lead representative. About whom are we talking here exactly? Is this the organizational leader of each team participating in this proposal (i.e., team leader) or is this the (high-level) organizational leader of the organization (e.g., head of university)?

Answer:

The NOI should list the names and affiliations of instrument teams. Administrative representatives of the team member's institution are not necessary.

Question 34:

Is there any more information on how to include Co-PI's in proposals since the Pre-proposal telecon?

Answer:

Yes, as further information on questions 21 and 24 regarding Co-PI's

In order to adapt the NSPIRES options to the requirement of the ESA Science Management Plan for Co-PI's on proposals, the following procedure should be adopted:

1.) Co-PI's should use the designation Co-I/Institutional PI as a proxy for Co-PI in the NSPIRES header
2.) The proposal text can refer to these individuals either as Co-PI's or as Deputy-PI as appropriate.

Question 35:

Has the orbit video been made available?

Answer:

Yes. Please see the ExoMars Additonal Information Tab on the website: salmon.nasa.gov

Question 36:

May an instrument propose a simple deployment after the aerobraking mission phase is completed, that purposely exceeds the NADIR deck volume in the -Y direction, and would such an instrument deployment be viewed as compliant and responsive to the AO?

Question 37:

May an instrument be proposed to exceed the NADIR deck volume shown in the E-PIP in the -Y direction if it does not violate any solar panel, launch vehicle shroud (fairing), or other mission constraints as documented in the E-PIP? Would such a proposal be considered responsive and compliant with the AO?

Question 38:

May one propose an instrument that exceeds the NADIR deck volume in the +X direction, as long as it does not appear to interfere with any spacecraft orbiter structure or violate any other constraints described in the E-PIP, and would this be considered compliant with the AO?

Answer to Questions 36, 37, and 38:

According to Figure 5.3.5 in the E-PIP, the volume indicated in red is the "nominal volume" on the Nadir-deck; each proposed instrument should try to stay within that. Assuming that sufficient other criteria are met, proposals of instruments that exceed the volume allocations described in the E-PIP may be considered responsive and would be reviewed. Exceeding the “nominal volume” in the +X-direction will be assessed, as stated in the E-PIP; however, not all details of the spacecraft bus are shown in the E-PIP. For additional volume needs in -Y-direction, potential interference with fields of view of instruments on the sun deck will be evaluated. Overall, the review process will consider the risk and complexity of accommodation of instruments on the spacecraft as a selection factor, along with the instrument development risk and the scientific merit.

Question 39:

The AO states we must send one pdf file (<15MB) but NSPIRES tutorials show, for example, that each person must upload CVs and letters of commitment separately to the proposal once it has been created. Which is correct?

Answer:

Proposals must conform to BOTH the page limit and the size limits given in the Salmon AO and the specific ExoMars Trace Gas Solicitation. Where there is a discrepancy, the ExoMars Trace Gas Orbiter Instrument Solicitation takes precedence. However, it should be noted that CoI Letters of Commitment must be

submitted electronically through NPIRES and will be included in the proposals header files. CV's on the other hand need to be included in the body of the proposal.

Quesition 40:

What is the anticipated maximum ExoMars data rate?" (the AO only gives the minimum and average).

Answer;

The maximum ExoMars Orbiter data rate at minimum Earth-Mars range is determined by the telecom system, and is expected to be up to about 15 Gbit/day. While two ground station tracks per day are foreseen at maximum Earth-Mars range to enable the minimum data rate, only a single station track is expected at minimum range.

Question 41:

Can you explain the rationale for setting the priorities of (1) resolution, (2) color, and (3) stereo? No such rationale is presented in the JIDT report or in the older Mars Science Orbiter studies. Landing site certification via meter-scale resolution (<0.5 m/pixel scale) was discussed in the second Science Analysis Group report for MSO, but the resources for this task do not seem to be available in the current opportunity. There must be scientific or programmatic reasons for setting such priorities--what are they? Also, what does "high resolution" mean in this context? Will proposals be evaluated against this rationale, whatever it is, or will they be evaluated as stated in Section 6.1, according to "The extent to which the proposed investigation addresses high priority science objectives, as defined in the JIDT report."

Answer:

In terms of trace gas science, the imaging objective was to identify features possibly related to trace gas sources and sinks (pg. H6-5). The priority of (panchromatic) high resolution imaging envisioned that suspected gas sources might be small in extent and would likely occur in areas which had not been imaged by instruments with high spatial resolution (MGS MOC, MEX HRSC-SRC, and MRO HiRISE), whereas lower resolution stereo (e.g., MEX HRSC and MRO CTX) and color (MEX HRSC and ODY THEMIS) have already covered extended areas of Mars. The JIDT felt that to go significantly beyond the resolution of the existing extended area coverage required something like a resolution of ~ 1 m/pixel (Table 1, JIDT report). Different combinations of imaging attributes may be advocated, but should take into account the existing databases and the mission goals.

Question 42:

Also, I know there is a question of how do we develop our instrument without knowing what "seat" (i.e., row A or B, seat 1, 2, or 3) on the spacecraft we will occupy. To what extent can we request a seat that provides the best viewing geometry and then propose an instrument design, etc. that fits in that location?

Answer:

Required interfaces and fields-of-view should be described within the context of the envelopes described in the E-PIP. Within that context a desirable location can be requested with the impacts of less desirable locations clearly identified.

Question 43:

In 4.6.2 it is said that there must be a single PI and in 4.6.3 it is added that there must be a PM. This paragraph also mentions deputy roles (dep. PI and dep. PM). Do these deputy roles explicitly apply to proposals for the ExoMars orbiter, i.e., is it recommended to add such roles also?

Also additional information on Questions 21,24 and 34

Answer:

Section 4.6.2-4.6.3 is written broadly to include all types of investigation, including PI-led missions. For instrument proposals, such as those solicited for this PEA, NASA holds the PI responsible for all aspects of her/his instrument development and operation. Management plans should clearly identify the exercise of responsibility and key individuals; traditionally these include roles such as Instrument Manager or Deputy PI.

The ExoMars Science Management Plan (SMP) requests that a Co-PI be designated in all proposals. However, the SMP plan also establishes that the full responsibility of the instrument development rests solely with the PI, consistently with this PEA. The Co-PI role has a deputy type status in some conditions, and provides a higher degree of visibility, which can be useful to recognise when another country or institute makes a substantial contribution to an instrument development. ESA normally addresses all communications to both PI and Co-PI.

Proposers may have noticed that NSPIRES does not allow designating a Co-PI (this is because this role has a different responsibility in NASA); however, NSPIRES provides the possibility to designate a Lead Co-I. Please use this option to assign the "Co-PI" role called for in the ExoMars SMP.

Question 44:

Per paragraph 3 of section 6.7 Payload/Mission Assurance Program in the Experiment Proposal Information Package we plan to implement a Qualification, Acceptance, and Proto-flight Test Program that is compliant with the Class C payload definition from NPR 8704.5. Specifically, "Limited qualification testing for new aspects of the design plus full acceptance test program. Testing required for verification of safety compliance and interface compatibility". Is this approach compliant with the AO requirements for a Class C instrument?

Answer:

Classification (e.g., C or B) depends on many factors, including complexity and contribution to the mission's success.

Question 45:

Question: how is the angle beta defined? Is it (seems to make sense) the angle between the solar direction and the orbital plane?

Answer:

The understanding is correct: the sun declination (Beta) is the angle between the sun vector (sun-orbiter) and the orbital plane.
Beta = 0 means the subsolar point with maximum eclipses duration during a science orbit
Beta = +/-90° means no eclipse, i.e. where the sun vector is perpendicular to the orbital plane
Beta=+/-45° means an intermediate elevation with eclipses

Question 46:

What does a NASA Co-I on a European PI-led proposal need in terms of letter of commitment/request for funding etc?

Answer:

We are preparing an amendment to the PEA to address how to integrate NASA CoIs into ESA European led proposals.

Question 47:

In preparing budgets for the science and operations role, should we budget for a potential extended mission beyond the end of the Science Operations Phase (early May 2016 - early May 2018), *i.e*. beyond the nominal Trace Gas Orbiter (TGO) mission?

Answer:

No. Do not submit a budget for an extended mission.

Question 48:

Do Phase A-D reserves come out of the $100M payload cost?

Answer:

Yes

Question 49:

In the AO, it is specified that font size must not be smaller than 12pt, and margins cannot be smaller that 2.5cm and 4cm for the bottom. Do these requirements apply also to the fact sheet ?

Answer:

No, these requirements do not apply to the fact sheet.

Question 50:

Currently, there are two versions of NICM. Which version will the TMC use to verify the budget numbers in the proposals?

Answer:

NASA does not discuss the methods and tools it will use to analyze cost proposals.

Question 51:

If all of the requirements for passing through KDP-B into Phase B will be satisfied in the proposal generation process, will the project be in Phase B when the funding is turned on?

Answer (amended):

Yes. See also answer to Question 61.

Question 52:

How do we deal with our possible add-on instruments? Must they fit within the proposal or can we add them in an appendix or should they submit separately?

Answer:

It is up to the proposal team (PI, Co-PI's and Co-I's) to decide on the instrument configuration they choose to propose. The team has the flexibility to propose any and all instrumentation that they feel is necessary to appropriately address the science objectives of the AO.
For the specific case in which the team considers submitting a proposal consisting of a baseline instrument configuration, but also contemplates a possible "descoped" version, we recommend the following approach:
1) The proposal should should clearly indicate what is the expected performance, resources, and cost of the baseline instrument;
2) The proposal should also indicate what is the science return, resource and cost footprint of the "baseline minus descope" version in case the descope is to be implemented.
The evaluation will consider the baseline configuration as first priority, and any changes from that as second priority.

Question 53:

If the listed PI on a proposal to NASA is from a small company or organization, are there constraints or requirements on lines of authority (financial and/or managerial) that should be considered or accommodated in order to be acceptable to NASA?

Answer:

There are no specific requirements, however, the description of the management plan should be clear regarding the details of the technical and financial management plan. These will be part of the evaluation process.

Question 54:

Is it possible to add 2 project managers (one is our overall manager and another manages the contribution from another country)?

Answer:

Yes, but it is important to describe in the text the roles and responsibilities of these individuals.

Question 55:

What is the difference between adding a collaborator to the NSPIRES cover page (where they must log in and confirm support) or adding their name to the list in Program Specific Data point 9?

Answer:

It is NASA's preference that all team members be listed on the cover page (e.g. registered in NSPIRES as collaborators). The NSPIRES cover page is entered into a data base and used by NASA to manage peer reviews, conflicts-of-interest, etc. In addition, only team members listed on the NSPIRES cover page are officially confirmed as team members for the selected investigation by the Selection Official. Cover page question 9 is intended to capture those individuals who do not rise to the level of team member. NASA also needs to know who those people are for the same reasons. It is up to the PI to determine whether an individual is a team member/collaborator or an other science participant.

Question 56:

Is it correct to assume that it is only people listed as co-investigators on NSPIRES for whom one must define a unique role within the science/technical team?

Answer:

It is necessary to define unique roles only for co-investigators. By definition (Section 4.6.5 of the SALMON AO), collaborators do not play a necessary role in the proposed investigation. Since the role is not necessary, NASA does not require that it be defined.

Question 57:

Must non-US institutions provide letters of commitment for Co-I services ?

Answer:

All CoI's must be registered and make their commitments electronically in NSPIRES. For CoI's whose non-US institutions are also proposing portions of the hardware, a letter of financial commitment is needed from the relevant authorities as described

in the AO.

Question 58:

Is it correct to assume that US institutions providing only Co-Investigators do not need to provide a LOC?

Answer:

All Co-Investigators must be registered and make their commitments electronically in NSPIRES, but we need to have budget details in the proposal for all Co-Investigators requesting US funding.

Question 59:

The minimum structural frequency as called out in section A1.2.7 Structural Design in the Experiment Proposal Information Package is higher than is typical for an instrument. Typical requirements are 50-75 Hz. If the instrument is designed to withstand the mechanical loads induced by the environment encountered during its entire lifetime, can the minimum frequency be lowered to the more typical range?

Answer:

The minimum structural frequency specified in A1.2.7 (140 Hz) is defined to dynamically decouple the instrument from the orbiter structure.
Instruments are generally required to comply with it. Non-compliance adds technical risk.
In case the instrument provider demonstrated that, in order to comply with the requirement, the mass penalty was too high, or the interface implementation too complex, a relaxation of the requirement could be discussed on a case by case basis.
We note however that the level mentioned in the question as 'typical' (50-75 Hz) is totally non-compliant with the ESA standard practices which normally assume 90 - 100 Hz as a minimum bound.
The proposal team should discuss their approach to comply with anticipated mechanical environment in their proposal, along any trade-offs they perceive if a relaxation of the minimum structural frequency eventually became available to their instrument. The technical and cost risk review will examine the approach proposed, and evaluate the implementation and accommodation risks accordingly.

Question 60:

Page 57 of the EPIP states that, “the maximum transfer data rate to the unit mass

memory is 1 Mbits/s". Page 137 of the EPIP states that, "Each instrument SpaceWire nominal and maximum data rates shall be defined and agreed with ESA/NASA". These statements seem to contradict. Imaging instruments, among others, collect data much faster than 1Mbit/s. The proposed science data interface would require them to have their own solid state recording capabilities to temporarily store data while waiting for the spacecraft to finish a data transfer. Is it possible to be given a faster science data link?

Answer:

The E-PIP is indeed unclear. Please use the following information:

The maximum transfer data rate for Science Data on Spacewire link between the entire instrument complement and the spacecraft mass memory shall be 100 Mbits/s.
Note: the data rate sharing between instruments will be clarified as far as detailed information will come from Instruments. However a minimum transfer data rate of 1 Mbps shall be guaranteed to each Instrument at any time it is on.

The efficient maximum transfer data rate for Command and Housekeeping (HK) on MIL-STD 1553 bus shared between all Instruments (plus other units connected to the same bus) and the spacecraft mass memory shall be at least 500 Kbits/s (TBC).

Question: 61

Pages B-24 and B-25 of the SALMON AO require that budget details be broken down by mission phase. What are the start and end dates of each mission phase. The project schedule on page 67 of the E-PIP does not use the NASA ABCDE phases.

Answer:

For budgeting purposes NASA funding, assume the following:
Phase B starts once the investigation contract has been negotiated;
Phase B to C transition is December 1, 2011;
Phase C to D transition is April 1, 2014;
Phase D to E transition is March 1, 2016.
.
Please note update on Question 51.

Question 62:

Do we need to include Phase E budgets in the proposals even though the Phase E costs do not count against the $100M cost cap?

Answer:

Yes.

Question 63:

Is a URL reference to a PowerPoint presentation that describes our instrument allowed?

Answer:

The proposal as submitted must be complete and the peer review will not consider the PowerPoint presentation in determining merit, but otherwise this is allowed

Question 64:

The highly international nature of the ExoMars Trace Gas Orbiter mission is specifically called out in section 4.2 Cost and Schedule Constraints in the PEA H6 where it is stated, "NASA expects to fund up to $100M for its portion of the suite of instruments to be flown, with the remainder of any cost to be borne by international partners, either as contributions to NASA led and funded instruments, or as complete instruments provided by the international partner. NASA funds are not restricted to funding NASA-led instruments and could be used to fund a U.S. contribution to an investigation led by an international partner." Given the intent of the ExoMars Trace Gas Orbiter mission, are proposals subject to the reserve requirements of section 4.8.6 of the SALMON AO?

Answer:

Section 4.8.6 applies for NASA proposals containing non-U.S. contributions.

Questions 65:

The AO states the following: 7.4.2 If the contract exceeds $650K, the contractor will have to certify the proposed costs for the contract, in accordance with FAR 15.406-2. A-2 VI. STATUS OF COST PROPOSALS Submission of cost or pricing data, as defined in FAR 15.401, is required if the combined Phase A and Bridge Phase costs exceed $650,000. Cost or pricing data will also be required for proposals for subsequent mission phases. Can you confirm that a U.S. contribution over $650K to a foreign led instrument does require certified costs?

Answer:

Any NASA contract over $650K with a US institution requires certified cost or pricing regardless of the phase(s) for with the contract is implemented.

Question 66:

Can you confirm that Table B-5 should in fact contain ONLY the NASA costs for a contribution to a foreign instrument? And, if so, please define the NASA Phases (A-D) in terms of the PIP phases based on the ESA schedule.

Answer:

Yes, NASA costs only should be included in Table B-5 except if there are contributions to the US portion (such as in kind labor) which should be included. Please see the response to Question 61 for when to plan for the various NASA mission phases.